



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,936	09/28/2006	Kazuyuki Inoguchi	14434.109USWO	5657
52835 7590 12/11/2008 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER				
GUGLIOTTA, NICOLE T				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
12/11/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,936

Applicant(s)

INOGUCHI ET AL.

Examiner

NICOLE T. GUGLIOTTA

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 5, 7, 9 - 11, 22, 27 is/are pending in the application.
- 4a) Of the above claim(s) 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 5, 7, 9 - 11, 22, 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date 10-16/2008, 7/16/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Examiner's Note

1. Examiner acknowledges the amendments to claims 1, 25 and 27, in addition to the cancellation of claims 6, 8, 12 – 21, 23 – 24, 26 and 28.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2-4, 5, 7, 9 – 11, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terauchi et al. (US 2003/0129421 A1), in view of Toshinori et al. (JP 2003 – 277537 A, Examiner has provided a machine translation).
4. In regard to claim 1, Terauchi et al. disclose an antistatic composite containing organic-inorganic composite particles obtained by bonding a polymer having a (meth)acryloyl group with inorganic oxide fine particles (typically silica sol) by way of an oxysilylalkylene sulfide bond (Section [0020]). Terauchi et al. further disclose a silane coupling agent having a highly polar functional group or a silane coupling agent having a bulky structure polar group. Kinds of the highly polar functional group or bulky functional group are not specially limited, but preferable examples include a polyalkene

oxide group, a carboxylic acid (ester group, a polycarboxylic acid (ester) group (Section [0034])). Highly polar groups are hydrophilic. Terauchi et al. disclose coating adhesion tests for the invention which resulted in no peeling, as well as Taber abrasion tests to determine abrasion resistance (Sections [0198], [0204], [0205], Examples 40 – 42, Sections [0209] - [0215]).

5. In regard to applicant's limitation of a "Taber abrasion test being carried out at a rotation number of 1000 with a load of 500 g being applied" in claim 1, and "a haze ratio of 4% or lower" in claim 5, Terauchi et al. disclose similar materials and a similar process and therefore a similar product. However, the properties of adherence and haze ratios (transparency) after abrasion tests are applied are both dependent upon the thickness of the coating, which Terauchi et al. is silent in regard to.

6. In regard to the final properties of the coating in claims 1 and 5, as well as claims 2– 4, Toshinori et al. disclose an organic-inorganic composite film with a thickness of 1 – 3 μm (Section [0022]). Toshinori et al. disclose if the film becomes too thin, a gas barrier function will fall, and conversely, if the film becomes too thick, a crack will go into a film easily (Section [0018]).

7. First, it would have been obvious to one of ordinary skill in the art at the time of the invention that the invention of Terauchi et al., which is made of similar materials as the invention of Toshinori et al., and which also has an abrasion haze of 0.4%, no peeling under an adhesion test, and fine particle silica sol should have a thickness of preferably 1 – 3 μm in order to avoid film from cracking and prevent permeation of gases through the film.

8. Second, in regard to applicant's limitation of claim 1 "the organic-inorganic film does not separate from the substrate after the Taber abrasion test prescribed in Japanese industrial Standards R3212 that is carried out with respect to a surface of the organic-inorganic composite film, the Taber abrasion test being carried out at a rotation number of 1000 with a load of 500 g being applied", and the limitation of claim 5: "wherein a portion has been subjected to the Taber abrasion test has a haze ratio of 4% or lower after the Taber abrasion test", the Examiner takes the position that a coating made of similar materials, and applied with a similar process and thickness will inherently have the same properties.

9. Applicant's invention is a film comprising silicon alkoxide, ITO (fine particles), strong acid, water, and alcohol, using a sol gel process, applied at a thickness of 1 - 5 μm . Terauchi et al. disclose an antistatic coating composition of organosilica sol, ITO (fine particles) (Section [0022]), acid, water, and a solvent with a hydroxyl group. Examiner takes the position the deposition of a coating containing a sol onto a substrate is equivalent to a sol gel process. While Terauchi et al. do not disclose a thickness, Toshinori et al. teach a coating thickness of 1 - 3 μm (Section [0022]).

10. Applicant's invention and the prior art comprise similar materials, processes and thickness. Similar materials, processes and thickness yield the same product as that of the prior art and therefore would inherently have the same properties, such as no separation after the same Taber abrasion test was performed at the same rotation number and load, as well as the same particle haze ratio. In regard to claim 7, Terauchi et al. disclose in order to accelerate the hydrolysis and condensation reaction, an acid

or an alkali, or other appropriate compounds may be used as a catalyst. An example of an acid catalyst includes phosphoric acid (Section [0072]).

11. In regard to claim 9, Terauchi et al. disclose kinds of the highly polar functional group or bulky functional group are not specially limited, but a preferable example includes a polyalkene oxide group (Section [0034]).

12. In regard to claim 10, Terauchi et al. disclose inorganic oxide fine particles. A primary particle size of a metal oxide is preferably from 1 to 100 nm. If the primary particle size is less than 1 nm, an effect of improving flaw resistance of hardness becomes low, and if the primary particle size is at least 100 nm, the particles tend to unpreferably cause secondary agglomeration and transparency tends to be lost (Section [0028]).

13. In regard to claims 5 and 11, Terauchi et al. disclose examples of their invention with a Taber abrasion test yielding a haze value of 0.4% (Examples 40 – 43). The above silica sol (inorganic fine particles) is preferably 10 – 40% of silica having a particle size from 5 – 30 nm (Section [0084]).

14. In regard to claim 27, Terauchi et al. disclose to impart antistatic properties an electroconductive layer, such as ITO (indium-tin composite oxide) layer may be added (Section [0012]) and Section [0027]).

15. Claim 22 is rejected under 35 U.S.C 103(a) as being unpatentable over Terauchi et al., in view of Kamitani (JP 2002-348542 A, Examiner has provided a machine translation).

16. Terauchi et al. disclose a plastic or resin substrate, but not a glass substrate.

17. Kamitani discloses an organic-inorganic composite membrane (film) comprising silica and hydrophilic organic material, on the surface of a glass plate (Section [0002]).

18. It would have been obvious to one skilled in the art at the time the invention was made that an organic-inorganic composite film of Terauchi et al. has properties such as excellent hardness, transparency, conductivity, abrasion resistance, antistatic properties, which would be desirable and applicable to substrates which are also transparent, but do not have good antistatic properties such as plastics and glass.

Response to Arguments

19. Examiner acknowledges the cancellation of claim 6, and therefore the objection to the specification in regard to this claim is withdrawn.

20. Applicant argues Terauchi et al., Toshinori et al. and Kamitani et al. fail to disclose no separation after the abrasion resistance tests by a 1000 rotation Taber abrasion test under a load of 500 g as claims 1 and 22 require, nor a particle haze ratio or ΔH_{1000} after the 1000 rotation Taber abrasion test
Applicant's arguments filed 8/5/2008 have been fully considered but they are not persuasive. Applicant's invention is a film comprising silicon alkoxide, ITO (fine

particles), strong acid, water, and alcohol, using a sol gel process, applied at a thickness of 1 - 5 μm . Terauchi et al. disclose an antistatic coating composition of organosilica sol, ITO (fine particles) (Section [0022]), acid, water, and a solvent with a hydroxyl group. Examiner takes the position the deposition of a coating containing a sol onto a substrate is equivalent to a sol gel process. While Terauchi et al. do not disclose a thickness, Toshinori et al. teach a coating thickness of 1 – 3 μm (Section [0022]). The reasons for combining these references is discussed above.

21. Applicant's invention and the prior art comprise similar materials, processes and thickness. Similar materials, processes and thickness yield the same product as that of the prior art and therefore would inherently have the same properties, such as no separation after the same Taber abrasion test was performed at the same rotation number and load, as well as the same particle haze ratio.

22. The terminal disclaimer filed on 8/5/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/594,606 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

24. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - Th 8:30 - 6 p.m., & every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NICOLE T. GUGLIOTTA
Examiner
Art Unit 1794

/Jennifer McNeil/

Supervisory Patent Examiner, Art Unit 1794